

Scene 0 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17005, -86.26820 · Generated October 23, 2026

OVERALL SCORE

5.8

Marginal



Front: Looking downstream, the channel narrows and flows through a wooded corridor with predominantly bare deciduous trees. Exposed flat rock slabs are visible on the left bank forming a shelf-like ledge above the water. The channel appears to have a slight curve to the right. Agricultural fields are visible through the trees in the background on the left side.

Right: The right bank (left bank when facing downstream) shows a low to moderate bank with deciduous trees and shrubs in dormant condition. Green herbaceous ground cover is emerging on the bank. The bank shows exposed soil and some root exposure where trees meet the water's edge. Agricultural fields or open land with structures are visible in the background through the bare canopy.

Back: Looking upstream, the channel curves away to the left with flowing water visible. The right bank shows exposed soil with tree roots and cedar trees. A wooded riparian corridor is present on both sides but the buffer appears narrow, especially on the left side where open land is nearby. Some woody debris is in the channel near the banks.

Left: The left bank view (right bank when facing downstream) shows a narrow wooded riparian corridor with large cedar and deciduous trees. Beyond the riparian strip, open agricultural fields are clearly visible. The stream curves downstream with shallow water flowing over what appears to be flat rock substrate. The riparian buffer is thin, perhaps only 25-50 feet before transitioning to open agricultural land. Some flat rock visible at the far right edge of the view in the channel.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	7		fair
Hydrologic Alteration	6		Fair
Sediment Deposition	5		Fair
Left Bank Stability	6		Fair
Right Bank Stability	6		Fair
Left Vegetative Protection	6		Fair
Right Vegetative Protection	5		Fair
Riparian Canopy Cover	5		Fair
Floodplain Vegetation	3		Poor
Water Appearance	5		Fair
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 0

Black Branch 20 at this starting reach is a small headwater perennial stream flowing through a narrow riparian corridor bordered by agricultural fields. The stream shows moderate impairment primarily from agricultural sedimentation, with fine silt and mud covering the native limestone bedrock substrate. Bank erosion is moderate on both sides, and the riparian buffer, while meeting minimum 30-foot TDEC standards, is thin and provides limited protection. Instream habitat is marginal due to sparse woody debris, shallow pools, and embedded substrate. No stormwater infrastructure or outfalls are present at this rural location, and no illicit discharge indicators were observed.

Primary Stressors

sedimentation, riparian loss, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	7	Channel appears largely natural with no visible structural modifications. Some lateral erosion is occurring but channel form is not heavily altered. Slight incision may be present based on bank heights observed upstream but generally appears to maintain floodplain connection. No evidence of straightening, dredging, or armoring.
Hydrologic Alteration	6	Channel shows slight incision with banks 2-4 feet above baseflow in some areas. Floodplain appears accessible during moderate flows based on low bank sections. Agricultural land use in watershed likely contributes to altered hydrology with increased peak flows and reduced baseflow. The channel appears to still connect to floodplain at higher flows.
Sediment Deposition	5	Fine sediment (silt and mud) covers much of the channel bed, partially burying what appears to be natural bedrock and gravel substrate. Silt deposits are visible in the down face view. While not forming large bars, fine sediment deposition is pervasive, suggesting ongoing sedimentation from agricultural runoff. Estimated 20-35% of bed affected.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	6	6	26_50_percent	Left bank shows moderate erosion with exposed roots at waterline. Agricultural field is visible beyond a thin riparian strip. Early spring herbaceous growth is beginning.
Right	6	5	26_50_percent	Right bank shows more pronounced erosion than left, with steeper slopes, exposed roots, and undercutting. Cedar tree roots provide significant anchoring in places. Agricultural land visible beyond thin riparian buffer.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	5	Currently bare deciduous canopy provides minimal shade (perhaps 15-25% from trunk and branch structure plus cedar cover). During growing season, canopy coverage would likely reach 50-75% based on tree density and spacing visible in the up face. For a warmwater stream, moderate shade is appropriate but current bare condition and some gaps in canopy suggest moderate shade even at peak leaf-out.
Left Buffer Width	25 50ft	Score: 5/10
Right Buffer Width	25 50ft	Score: 5/10
TDEC 30ft Buffer Met?	L: Yes / R: Yes	The 30ft minimum buffer appears to be met on both sides but barely. Agricultural fields are clearly visible through the riparian corridor indicating the buffer is narrow. Buffer widening through conservation easements or agricultural buffer programs would significantly improve stream health and sediment filtration capacity.

Water Quality & Infrastructure · Scene 0

Water Quality Indicators

Metric	Score	Notes
Water Appearance	5	Water has a slight brownish tint and is slightly turbid. Based on the down face view, the bed is visible through the shallow water (approximately 6-12 inches deep) but clarity is reduced by suspended sediment. In deeper areas, visibility would likely be 1-2 feet. No oil sheen, foam, or algal issues observed. The brown color is consistent with fine sediment suspension from the silt/mud substrate.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	8	No visible evidence of manure, livestock access, or waste in the stream or on banks. Agricultural fields appear to be crop fields (not pasture) based on the dormant vegetation visible. No livestock fencing, trails, or bank trampling observed. However, the adjacent agricultural use warrants monitoring for potential nutrient and pesticide inputs.
Surface Contamination	-	Sheen: No · Foam: No · Odor: none

Stormwater Infrastructure

No outfall detected at this location.

Instream Habitat

Metric	Score	Notes
Epifaunal Substrate	-	

Stream Characteristics

Field	Value
Stream Type	perennial
Gradient	low_flat

Management Recommendations

Action	Priority	Timeline
Complete outfall mapping for upstream drainage area to verify no unreported discharge points	medium	annual
Continue visual stream survey through remaining 53 scenes to document full reach conditions	high	immediate

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